

Frontiers of Improvement

COVID-19 pandemic: a time for collaboration and a unified global health front

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Abstract

Coronavirus disease 2019 has, in the span of weeks, immobilized entire countries and mobilized leading institutions worldwide in a race towards treatments and preventions. Although several solutions such as telemedicine and online education platforms have been implemented to reduce human contact and further transmission, countries need to favour collectivism both within and beyond their borders. Inspired by experiences of previous outbreaks such as SARS in 2003 and Ebola in 2014–2015, global solidarity is a must in order to prevent further morbidity and mortality. Examples in leadership and collaborations ranging from research funds from the Bill and Melinda Gates Foundation to mask donations by the Jack Ma Foundation should be celebrated as examples to follow. Open communication and transparency will be crucial in monitoring the evolution of the disease in the global effort of flattening the curve. This crisis will challenge the integrity and fuel innovation of health systems worldwide, whilst posing a new quality chasm that warrants increased recognition.

Key words: COVID-19, coronavirus, global health, health policy

On 27 May, 2020, over five million confirmed cases and 350 000 deaths were recorded due to the coronavirus disease 2019 (COVID-19) [1]. The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which causes COVID-19, has led dozens of countries to sequentially decide to enter lockdown to the extent that a majority of the world's population was and is subject to shelter-in-place. Although the development of vaccines and targeted pharmacological treatments are months away, decisive public health leadership is necessary to adequately mitigate the exponential increase in COVID-19 cases by flattening the epidemiological curve and by preparing for future waves and the post-COVID-19 era [2].

Many solutions have already been proposed and put in place to tackle the growing strain on health systems around the world. Telemedicine is used to assess suspected cases prior to relocating them to health care facilities to get them tested in the interest of resource

allocation [3]. This form of 'forward triage' limits the influx of patients to emergency department and primary care centres, limiting further spread and pressure on providers. Rigorous social distancing is recommended in heavily-hit countries in East Asia, Europe and North America, as countries closed schools and businesses, and social events and sports leagues were postponed. Meanwhile, classes and job interviews are conducted through virtual platforms as preventive self-isolation ramped up across populations.

Lessons learned—and to be Learned

The SARS and Ebola outbreaks in the past two decades have made countries around the world restructure emergency preparedness and disease surveillance programs to mitigate potential future epidemics. In 2003, at the peak of the SARS outbreak, collaborative efforts between China and the rest of the world rapidly ensured the isolation, testing and mitigation of SARS-CoV, containing SARS within months

[4]. Between 2014 and 2015, the Ebola epidemic in West Africa led to nearly 30 000 cases with a 40% case fatality rate [5]. To respond to this surge in cases after previous, smaller outbreaks, regional travel restrictions and international collaborations between public health departments and the World Health Organization (WHO) quickly contained the outbreak before becoming a pandemic.

Now, in the heat of COVID-19, countries ought to set aside individualism and exceptionalism in favour of collectivism. For example, although delayed, China's lockdown in the Hubei province quickly led to a breaking point in the exponential case growth in the country after the recording of tens of thousands of cases in Hubei. Nigeria's exceptional contact tracing response to their first cases led to a quick halt in national spread despite its large population. In Taiwan, temperature checks upon arrival were instituted early January after discovering an unknown surge in 'severe flu' cases in mainland China [6]. South Korea approached the pandemic in a proactive way with broad testing, rigorous contact tracing and reinforced quarantines, resulting in a rapidly decreasing number of new cases and a remarkably low case fatality rate [7]. In Hong Kong, home to some of the world's most densely populated areas, social distancing measures were put in place early and life continues as near-normal.

These lessons are now of use in countries where the surge of COVID-19 cases is happening live or have recently peaked, and essential items such as intensive care beds, personal protective equipment, terminal cleaning supplies and ventilators may have to be rationed. China's facility-level efforts are actively translated to other countries. This includes rescheduling elective surgeries to limit exposure of patients and providers to potential COVID-19, shifting urgent inpatient diagnostic and surgical procedures to outpatient settings when feasible, limiting visitors to patients and planning for a surge of critically ill patients along with their need for medical treatment and quarantine residences. Recognizing the risk of health care worker shortages, efforts to support the health care workforce are essential. Measures include adequate personal protective equipment resources, active training in the proper use of barrier precautions and hygiene, and deploying those at risk of severe infection away from highest risk sites [3]. Furthermore, health workers must have adequate rest and contingencies in place should they become infected in order to have sufficient time and support for recovery.

A new quality chasm arises that deserves attention as the resource constraints and unease among health workers continue to grow [8]. The need for detailed attention for infection protection, rapid development of new clinical guidelines and introduction of task-sharing practices in high-income countries (e.g. retraining non-intensivist health care professionals to support intensive care units) have led to an unprecedented and simultaneous shock to contemporary medical practice. In addition, we have a role to protect societies' most vulnerable, including those who are pregnant, immunocompromised, fall ill, live in rural areas and are subject to health disparities, with attention paid to unique ethnic and gender disparities. Early results hint at the higher risk for hospitalization and mortality for Americans with lower socioeconomic status, living in rural or underserved communities, or being African American or Hispanic [9, 10]. Lastly, the fast-tracking of trials, accelerated peer review, surge of preprints and fear-mongering media have led to an increase in use of off-label and unproven drugs (e.g. hydroxychloroquine). This resulted in adverse clinical outcomes and unwarranted ceasing of necessary and potentially protective medication (e.g. angiotensin converting enzyme inhibitors) [11]. This proves the need to maintain rigorous methodological standards, rather than merely

bypassing conventional approaches to accelerate research in times of uncertainty.

In turn, although most low- and middle-income countries are yet to be struck by the substantial numbers of COVID-19 cases seen in high-income countries, the potential impact on growing and fragile health systems may have unprecedented consequences. In the past decades, development aid for health has mostly focused on vertical disease silos, whereas health systems strengthening interventions have only recently gained attention [12]. Nevertheless, lessons may be drawn from the SARS and Ebola outbreaks and sustained care delivery for emergency cases and progressive diseases in the light of resource constraints in low- and middle-income countries across the globe.

Global health collaborations

With the global peak of the COVID-19 pandemic impending, international collaborations are necessary more than ever. China's recent initiative to support Italy by providing experienced health care professionals, 1000 ventilators, 100 000 masks, 20 000 protective equipment and 50 000 test kits sets an example of human solidarity for other countries to follow in the near future. This may be further implemented through electronic patient monitoring and telemedicine programs to support colleagues elsewhere in the world and provide the necessary expertise in the light of growing bodies of knowledge and a growing risk of health care worker infection. Additionally, the WHO plays a pivotal role in coordinating the global pandemic response efforts by ensuring appropriate communications between public health bodies and ministries of health around the world, whilst leveraging support from other US branches. Furthermore, non-governmental organizations have shown early leadership in mitigating the outbreak. The Bill & Melinda Gates Foundation announced large financial support to the KU Leuven in Belgium to test the efficacy of pharmacological substances against SARS-CoV-2. The Jack Ma Foundation recently donated one million masks and 500 000 testing kits to the USA. Similarly, industry ought to play an increasingly important and altruistic role in combating COVID-19 through improving the efficiency of testing kit development, vaccine generation and bridging the growing gap in intensive care units' capacity across the world. Lastly, fighting panic with information through worldwide collaboration and rapid dissemination of trustworthy information is critical to mitigate harm to population health. Transparent reporting of cases, data sharing and open-access peer-reviewed research can aid in public education and, ultimately, individual responsibility for the prevention of further spreading of COVID-19. This is underlined by efforts such as the WHO's 'myth busters' aimed at combatting misinformation around COVID-19, Google's creation of an SOS Alert on COVID-19, and the web-based dashboard by John Hopkins University's Center for Systems Science and Engineering to track COVID-19 cases globally.

Quality amidst pandemic

As the world braces for a miracle cure or vaccine, we cannot allow a decline in scientific rigour or inflation of the potential value of a therapy. At any time, our patients deserve safe and effective evidence-based therapies for COVID-19. Researchers are responsible for the ethical conduct of studies and need to ensure that consent is safeguarded, appropriate data analysis and reporting was conducted, the expected gain is commensurate with therapeutic risks, and fair subject

selection takes place. Similarly, journals are responsible for ensuring the ethical conduct of the research that they publish and ought to publish both positive and negative studies as they both have value in the treatment of patients with COVID-19. Hereby, a fine balance needs to be struck between accelerating the publication process—to better and more quickly inform COVID-19-specific medical care—which is currently being done by major journals, and maintaining academic integrity and rigour. Furthermore, to mitigate harm to population health, physicians have a role to combat misinformation to ensure the credibility and accuracy of medical information that is disseminated, refute misinformation and promote evidence-based practice.

Conclusion

History lessons and trickle-up health systems innovation show promising early results, encouraging state and public health leaders to look beyond borders. Flattening the curve globally will require international, multisectoral collaborative efforts to ensure that countries' health systems are able to maintain sufficient capacity to address the flux of complicated COVID-19 cases and protect the vulnerable and elderly in the world's population. Only by learning from the global experience in our battle against a virus that respects no borders, can we honour the lives already lost and implement life-saving measures for current and future patients.

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